

CLAIMS

1. A fixture for use in thermally curing an object fabricated from a polymeric matrix, said fixture comprising:

4 a wall portion of predetermined size and shape adapted for supportive engagement with a surface of the object;

said wall portion being adapted to maintain said supportive engagement during exposure to a predetermined range
8 of temperatures utilized for thermal curing;

said wall portion being fabricated from a polymeric material being elastically deformable to facilitate said supportive engagement.

12 2. The fixture as set forth in claim 1, wherein said predetermined range of temperatures comprises a range of approximately 60-300 degrees Celsius.

3. The fixture as set forth in claim 1, wherein said wall portion is adapted to provide substantially mechanically neutral support to the surface of the object.

4. The fixture as set forth in claim 1, being fabricated from a polymer selected from the group consisting of filled or unfilled silicone rubber, polytetrafluoroethylene, fluorinated ethylene propylene, polyimide, acrylates, ethylene-propylene terpolymer, butyl rubber, chlorosulfonated polyethylene, neoprene, nitrile rubbers or combinations thereof.

24 5. The fixture as set forth in claim 4, being fabricated from a polymer selected from the group consisting of: filled or unfilled silicone rubber, polytetrafluoroethylene, fluorinated ethylene propylene, polyimide or blends thereof.

6. The fixture as set forth in claim 5, being fabricated from silicone rubber.
7. The fixture as set forth in claim 1, being adapted to engage a peripheral surface of the object.
8. The fixture as set forth in claim 7, wherein the peripheral surface is substantially circular and said fixture is substantially annular.
9. The fixture as set forth in claim 8, wherein the object is a bonded abrasive grinding wheel having a substantially cylindrical peripheral surface, said annular fixture being substantially cylindrical.
10. The fixture as set forth in claim 8, wherein the peripheral surface and said fixture are both substantially frusto-conical.
11. The fixture as set forth in claim 7, wherein the peripheral surface and said fixture are both substantially of the same shape, and the shape is selected from the group consisting of rectangular, trapazoidal, segmental and prismatic shapes.
12. The fixture as set forth in claim 1, wherein said fixture is adapted to engage an interior surface of the object.
13. The fixture as set forth in claim 12, wherein the interior surface and said fixture are substantially cylindrical.
14. The fixture as set forth in claim 13, wherein said fixture comprises a tube.
15. The fixture as set forth in claim 13, wherein said fixture comprises a solid plug.

16. A method of forming an object from a polymeric matrix, comprising the steps of:

- molding the object;
- 4 providing a support sized and shaped to engage a surface of the object, the support being fabricated from a material that exhibits substantial resilience and resistance to thermal curing temperatures;
- 8 engaging the support with the surface of the object; thermally curing the object; and removing the object from the support.

17. The method as set forth in claim 16, wherein the fixture
12 is fabricated from a polymer being thermally resistant to temperatures within a range of approximately 60-300 degrees Celsius.

18. The method as set forth in claim 16, wherein the fixture
16 is fabricated from a polymer selected from the group consisting of filled or unfilled silicone rubber, polytetrafluoroethylene, fluorinated ethylene propylene, polyimide, acrylates, ethylene-propylene terpolymer, butyl rubber, chlorosulfonated polyethylene, neoprene, nitrile rubbers or combinations thereof.

19. The method as set forth in claim 18, wherein the fixture is fabricated from silicone rubber.

24 20. The method as set forth in claim 16, wherein the fixture is adapted to engage a peripheral surface of the object.

21. The method as set forth in claim 16, wherein said fixture is adapted to engage an interior surface of the object.